

REMARKS

Claim 52 has been amended. No new matter has been introduced. Claims 52 and 56-62 are currently pending.

Claims 52 and 56-59 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Yamamoto (U.S. Pub. App. No. 2004/0080006) in view of Ichikawa (U.S. Patent No. 6,473,144). The rejection is respectfully traversed.

As best understood by Applicant, Yamamoto relates to an image sensor having concave-shaped micro-lenses. *See* Yamamoto at Title. As admitted by the Office Action (at 3), Yamamoto fails to teach that “a portion of [a] second light conductor over said planar surface of [a] first light conductor has a thickness approximately equal to $\lambda/2 * N$, wherein λ refers to a particular wavelength of light entering the microlens, and N refers to an index of refraction associated with the second light conductor,” as recited by claim 52.

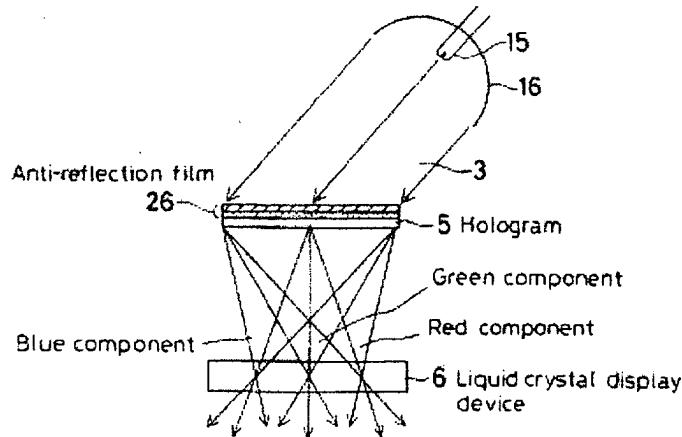
To allegedly “fill the gap” between Yamamoto and the claimed invention, the Office Action (at 3) attempts to combine Ichikawa with Yamamoto. Applicant respectfully submits that the Office Action has failed to provide a *prima facie* case of obviousness. As stated in Applicant’s August 11, 2008 response, the Supreme Court has held that “the [Graham] factors continue to define the inquiry that controls a finding of obviousness.” *KSR Int’l Co. v. Teleflex Inc.*, 127 SCt 1727, 82 USPQ2d 1385, 1397 (2007). The *Graham* factors include determining the scope and content of the prior art, ascertaining differences between the prior art and the claims at issue, and resolving the level of ordinary skill in the pertinent art. *Graham v. John Deere*, 383 U.S. 1, 148 USPQ 459 (1966); *see also* MPEP 2141.01. Applicant submits that the Office Action has not shown that the claims would have been obvious by conducting a full examination of the *Graham* factors. Specifically, the Office Action has not explicitly or implicitly ascertained the “differences between the prior art and the claims at issue.”

Moreover, “[r]ejections on obviousness cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to

support the legal conclusion of obviousness." MPEP 2141.01 (quoting *KSR* 127 SCt 1727, 82 USPQ2d 1385). In this case, the Office Action attempts to articulate its reasoning for combining the two references (at 3), but the reasoning is based on a faulty premise. The Office Action states that "it would have been obvious at the time of the present invention to modify Yamamoto by including the portion of the second conductor having a thickness approximately equal to $\lambda/2*N$ so as to prevent crosstalk between pixels and thereby improve the light utilization efficiency." *See* Office Action at 3. This, however, is not what Ichikawa teaches.

As best understood by Applicant, Ichikawa relates to a liquid crystal display apparatus. *See* Ichikawa at Title. According to Ichikawa, a hologram array 5, which includes individual microholograms 5', is used to diffract white light into its component parts to strike respective liquid crystal cells 6' in its liquid crystal display device 6. *See* Ichikawa at 7:14-21 and FIG. 9 (reproduced below).

FIG. 9



Ichikawa's device can include an anti-reflection film 26; in one embodiment the anti-reflection film is a single-layer film having a thickness of $nd=\lambda/4$ (or $d=\lambda/4n$). *See* Ichikawa at 12:48-55. If, however, the anti-reflection film 26 is formed as a *double-layer film* (as shown in Ichikawa's FIG. 9, and relied upon by the Office Action (at 3)), then a first layer of a high-refractive material is formed over a second layer of a low-refractive material having a thickness of $d=\lambda/4n$.

See id. at 12:61-64. Thus, contrary to the Office Action's assertion, Ichikawa does *not* teach an anti-reflection film having a thickness "equal to $\lambda/2 * N$," as recited by claim 52. Indeed, it includes an anti-reflection film having at least one layer having a thickness equal to $d=\lambda/4n$.

More importantly, there is no suggestion in either Yamamoto, which teaches an *image sensor*, or Ichikawa, which teaches a *display device*, for using any image display structures of Ichikawa in the image sensor of Yamamoto.

Moreover, in combining the references, which is improper for the reasons discussed above, the Office Action is engaging in impermissible hindsight using Applicant's disclosure as a guide to arrive at the claimed invention. Ichikawa's anti-reflection film is a planar film deposited over the entirety of its hologram array, including portions of its devices intended for light transmission and portions not intended for light transmission. *See* Ichikawa at FIG. 9. If the references were combined, which Applicant submits is not proper, the resulting structure would include Ichikawa's anti-reflection film formed over the entirety of Yamamoto's alleged second light conductor. One of ordinary skill in the art would not modify portions of Yamamoto's alleged second light conductor to have a thickness equal to only one layer of Ichikawa's double-layered film, as asserted by the Office Action. Accordingly, even if combined, the combination would fail to disclose, teach, or suggest "a portion of said second light conductor over said planar surface of said first light conductor has a thickness approximately equal to $\lambda/2 * N$. . . reducing cross-talk between adjacent photosensitive regions by spectral reflectance" as recited by claim 52.

Furthermore, Yamamoto and Ichikawa teach away from one another. As discussed above, Ichikawa teaches the use of a hologram array as a diffraction device to separate and transmit colors of *all* different wavelengths. *See* Ichikawa at 7:14-21 and FIG. 9. As best understood by Applicant, Yamamoto teaches an image sensor having color filters associated with each of its pixels for a color image. *See* Yamamoto at [0014]. According to Yamamoto, the color filters are "pigmented or dyed material that will *only* allow a narrow band of light to pass therethrough." *Id.* (emphasis added). Accordingly, while Yamamoto allows *only* a narrow band of light to pass through its color filter, thereby allowing only a *single* narrow band of light to strike its light

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sensitive element, Ichikawa specifically teaches the transmission of *multiple* bands of light by its hologram array. As such, the two references teach away from one another. Moreover, combining the references would destroy the teachings of each. Applicant respectfully submits that the references are not properly combinable for at least this reason.

For all of these reasons, the rejection should be withdrawn, and claim 52 should be allowed. Claims 56-59, which depend from claim 52, are allowable over the cited references for at least the same reasons discussed above, and on their own merits. Applicants respectfully request that the rejection be withdrawn, and the claims allowed.

Claim 60 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Yamamoto in view of Ichikawa and further in view of Hook (U.S. Patent No. 5,898,196). The rejection is respectfully traversed.

Claim 60, which depends from claim 52, is not rendered obvious by the cited references. As discussed above, Yamamoto and Ichikawa fail to render claim 52 obvious. Hook fails to cure the deficiencies of the cited references. As such, claim 60 is allowable over the cited references for at least the reasons discussed above with respect to claim 52, and on its own merits.

Claim 61 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Yamamoto in view of Ichikawa and further in view of Kochi (U.S. Patent No. 6,188,094). The rejection is respectfully traversed.

Claim 61, which depends from claim 52, is not rendered obvious by the cited references. As discussed above, Yamamoto and Ichikawa fail to render claim 52 obvious. Kochi fails to cure the deficiencies of the cited references. As such, claim 61 is allowable over the cited references for at least the reasons discussed above with respect to claim 52, and on its own merits.

Claim 62 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Yamamoto in view of Ichikawa and further in view of Lee (U.S. Pub. No. 2002/0162943). The rejection is respectfully traversed.

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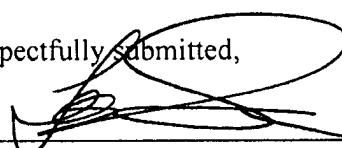
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Claim 62, which depends from claim 52, is not rendered obvious by the cited references. As discussed above, Yamamoto and Ichikawa fail to render claim 52 obvious. Lee fails to cure the deficiencies of the cited references. As such, claim 62 is allowable over the cited references for at least the reasons discussed above with respect to claim 52, and on its own merits.

In view of the above amendment, applicant believes the pending application is in condition for allowance.

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Respectfully submitted,

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